

*PARAPROCASTEA CROCANTINAE*,  
A NEW GENUS AND SPECIES  
(POLYCHAETA: SYLLIDAE: AUTOLYTINAE)  
FROM THE SPANISH MEDITERRANEAN

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*Abstract.*—*Paraprocerastea crocantinae*, a new genus and species of Autolytinae (Syllidae: Polychaeta) from off Cabo de Creus and Cabo de Gata both on the Mediterranean coasts of Spain, is described. The new genus is discussed and compared with the remaining genera of Autolytinae. Finally, a key to the genera of Autolytinae is given.

In a study of Alós (1988) on the polychaetous annelids from the Cabo de Creus coast (Spain), two specimens of a syllid were found. These specimens were originally identified as an unknown species of *Procerastea* Langerhans, 1884. Another specimen, longer than the others, was collected by the first author in a study of the polychaetes from *Posidonia oceanica* beds along the southern coast of Spain. This latter study was part of a project on the invertebrates from this habitat in Southeast Spain.

A new detailed study of all these specimens reveals the presence of small dorsal cirri on all segments. This character definitively separates these specimens from the genus *Procerastea* which only has dorsal cirri on the first setiger. This new genus is named *Paraprocerastea* and is overall very similar to *Procerastea*.

Two other genera of Autolytinae seem also to be related to *Paraprocerastea*: *Alluaudella* Gravier, 1905, from Madagascar and the Arabian Gulf, and *Phyllosyllis* Ehlers, 1897, from Antarctica. *Paraprocerastea* differs from both genera by having a pharynx with a trepan. It differs further from *Phyllosyllis* by having a different disposition of anterior segments and different setae, and from *Alluaudella* by having antennae and dorsal cirri of a different shape.

Observations and measurements were

made by means of a microscope with interference contrast optics. Drawings were made by means of a drawing tube. Length measurements exclude antennae and anal cirri; width measurements were taken at proventricular level, excluding dorsal cirri and setae. The holotype and paratype from off Cabo de Creus are preserved in 70% ethanol. The other paratype is in a permanent microscopical preparation made with glycerin jelly. All type material is deposited in the Museo Nacional de Ciencias Naturales de Madrid (MNCNM), Spain.

Family Syllidae Grube, 1850  
Subfamily Autolytinae Rioja, 1925  
*Paraprocerastea*, new genus

*Diagnosis.*—Body small, short, without segmentarial ciliation, small number of setigers. Prostomium relatively large, partially covered by an occipital flap from tentacular segment. Four dorsal eyes and two ventral eyespots; three thick, club-shaped antennae. Palps reduced, completely fused. Two pairs of tentacular cirri. Tentacular cirri and dorsal cirri of first setiger club-shaped. Remaining dorsal cirri minute, egg-shaped. Two subrectangular, relatively long, anal cirri. Simple setae of only two kinds: bayonet-shaped setae and falcate setae. Pharynx slender, with a distal trepan.

*Remarks.*—Gidholm (1967:177) classified the genera of Autolytinae in two natural groups. One group, composed of *Proceraea* Ehlers, 1864, *Procerastea* Langerhans, 1884, and *Virchowia* Langerhans, 1879 (= *Umbellysyllis* Sars, 1869; according to Hartman 1959), is characterized by having internal parapodial glands, segmental ciliation reduced or absent, bayonet setae of the thick type, and stolonization by anterior scissiparity. The other group, composed of *Autolytus* Grube, 1850, and *Myrianida* Milne Edwards, 1845, is characterized by external parapodial glands, well developed segmental ciliation, bayonet setae of the slender type, and stolonization, if present, of a type other than anterior scissiparity. Gidholm did not include two, poorly known, genera of this subfamily, *Phyllosyllis* Ehlers, 1897 and *Alluaudella* Gravier, 1905. These two genera have unarmed pharynges, lack segmental ciliation, and apparently lack bayonet-shaped setae. The parapodial glands have not been described; they could constitute a third natural group.

Another genus, *Odontoautolytus* Hartmann-Schröder, 1979, has an uncertain position between the subfamilies Eusyllinae and Autolytinae, because it is very similar to *Odontosyllis* Claparède, 1863, but lacks ventral cirri.

Imajima & Hartman (1964) described another genus, *Autosyllis*, on the basis of a solitary Polybostrichus stolon. Consequently, it is very difficult to know the characters of the atokous form and determine to which group it belongs. According to Gidholm, the specimen of *Autosyllis* is very similar to a male Polybostrichus of *Umbellysyllis*.

*Paraprocerastea* differs from *Procerastea* in having minute dorsal cirri on all segments, whereas *Procerastea* has dorsal cirri only on setiger 1. However, the stolons of *Procerastea* have dorsal cirri on all setigers (Fauvel 1923:326, Allen 1921:135–137) similar to those of *Paraprocerastea*, and the segments in regeneration of adults have very small dorsal cirri (see Allen 1921:135, 140).

These observations indicate a very close relationship between both genera. Another difference is the peculiar, slender, bayonet setae of *Paraprocerastea*, whereas the bayonet setae of *Procerastea* are thicker, with several short spines and a long filament, very similar to those of *Proceraea* (see Gidholm 1967:207). On the other hand, the setae of *Paraprocerastea crocantinae* are very similar to the simple setae of *Procerastea halleziana* Malaquin, 1893 (see Malaquin 1893:81, Fauvel 1923:326, Gidholm 1967:207, Alós 1988:244), *P. nematodes* Langerhans, 1884 (see Langerhans 1884:249, Fauvel 1923:326, Gidholm 1967:207) and *P. australensis* Hartmann-Schröder, 1987 (see Hartmann-Schröder 1987:65). These simple setae probably originated by shaft and blade fusion of compound setae; however, no compound setae or slightly fused setae have been found on *Paraprocerastea crocantinae*. Finally, *Procerastea* has nuchal epaulettes and *Paraprocerastea* has an occipital flap.

The genus *Phyllosyllis* is also very similar to *Paraprocerastea* in having cylindrical to club-shaped anterior appendages, similar in length to body width, and very small, pyriform to egg-shaped dorsal cirri on the remaining segments. However, *Phyllosyllis* has an unarmed pharynx, only compound setae and setae on the tentacular segment (Hartman 1964:83); this last character is unusual in the family Syllidae and, in our opinion, another interpretation is possible; according to the drawings of Ehlers (1897) and Hartman (1964), *P. albida* has only a pair of short tentacular cirri on a reduced tentacular segment, and the longer cirri are actually the dorsal cirri of the second segment (first setiger).

Finally, *Alluaudella* is also very close to *Paraprocerastea* but has shorter antennae, an unarmed pharynx, well developed dorsal cirri similar throughout the body, whereas the latter genus has long antennae, a pharynx with a trepan, and short, egg-shaped, dorsal cirri from the second setiger. On the other hand, *P. crocantinae* is similar to *A.*



*madagascarensis* in having an occipital flap and in the shape of the setae.

*Type species.*—*Paraprocerastea crocantinae*.

*Etymology.*—The generic name is referred to the close relation with the genus *Procerastea*; gender is feminine.

*Paraprocerastea crocantinae*, new species  
Fig. 1

*Material examined.*—Cala Taballera, off Cabo de Creus, Gerona, Spain; calcareous concretions of *Mesophyllum lichenoides* and *Lithophyllum expansum*; 12 m depth; holotype, complete, but left dorsal cirri of first setiger lacking. Isle Massa d'or, off Cabo de Creus; calcareous concretions of *Lithophyllum expansum*; 20 m depth; one paratype, complete, but median antenna lacking. Off Los Genoveses Inlet, Almería, Spain; rhizomes of *Posidonia oceanica*; 3 m depth; one paratype, complete, but antennae lacking.

*Etymology.*—The name of the species is dedicated to the research vessel *Crocantina* of the Departamento de Biología (Zoología), Universidad Autónoma de Madrid.

*Description.*—Body relatively short and thick, cylindrical, 3.4 mm length, 0.32 mm width, 33 setigers, without color marking, without segmentarial ciliation. Prostomium (Fig. 1A, B) proportionally large, circular; four large eyes in rectangular arrangement and two small ventral eyespots. Palps very reduced, practically nonexistent, completely fused to one another. Three thick antennae, cylindrical to club-shaped, lateral antenna more than twice prostomium length, originating on anterior margin of prostomium; median antenna approximately three times longer than lateral antennae, originating between anterior eyes (Fig. 1A). Tentacular segment ventrally reduced, dorsally prolonged in an occipital flap, covering posterior half of prostomium; two pairs of tentacular cirri, similar in shape to antennae, dorsal ones approximately half of lateral antennae length, ventral ones somewhat short-

er (Fig. 1A, B). Dorsal cirri of first setiger club-shaped, similar in length to dorsal tentacular cirri; dorsal cirri of remaining segments minute, egg-shaped to oval (Fig. 1A, B). Parapodia short, conical, without ventral cirri (Fig. 1E). Setae simple and of only two kinds: bayonet-shaped setae and falcate setae; similar on all segments, without dorsoventral gradation in shape (Fig. 1E); parapodia each with one dorsal bayonet-shaped seta of a peculiar kind, relatively thin, ending in four short spines and a long filiform filament (Fig. 1F, J), and from three to five thick simple falcate setae, bifid, with two acute, curved, unequal teeth, provided with a subterminal thickened crown of a complete ring of small spines (Fig. 1G, H, K, L). Aciculae numbering 1–2 per parapodium, thin, with rounded tip (Fig. 1I). Internal glands with granular material in each side of post-proventricular setigers, two to three per parapodium. Pygidium small, anal cirri longer than dorsal cirri, thick, rectangular to oval (Fig. 1D). Pharynx thin, with distinct sinuation, through about 3 segments (Fig. 1A, B); trepan with 20 similar acutely triangular teeth (Fig. 1C). Proventriculum shorter than pharynx, through about 1½ segments, with 22 muscle cell rows (Fig. 1A, B). Reproduction unknown.

*Remarks.*—The only species of Autolytinae in the Mediterranean with only simple setae is *Procerastea pori* Ben-Eliahu, 1977 (Ben-Eliahu 1977, San Martín 1984); however, this species has setae very different in shape, the trepan has only five large teeth, lacks of bayonet setae and nuchal epaulettes and, finally, the real number of tentacular cirri is unknown.

Key to the genera of Autolytinae

The genera *Autosyllis* and *Odontoautolytus* are not included in the key for the reasons given in the remarks.

1. Pharynx unarmed . . . . . 2
- Pharynx provided with a trepan . . . 3
2. Two pairs of tentacular cirri. Occip-

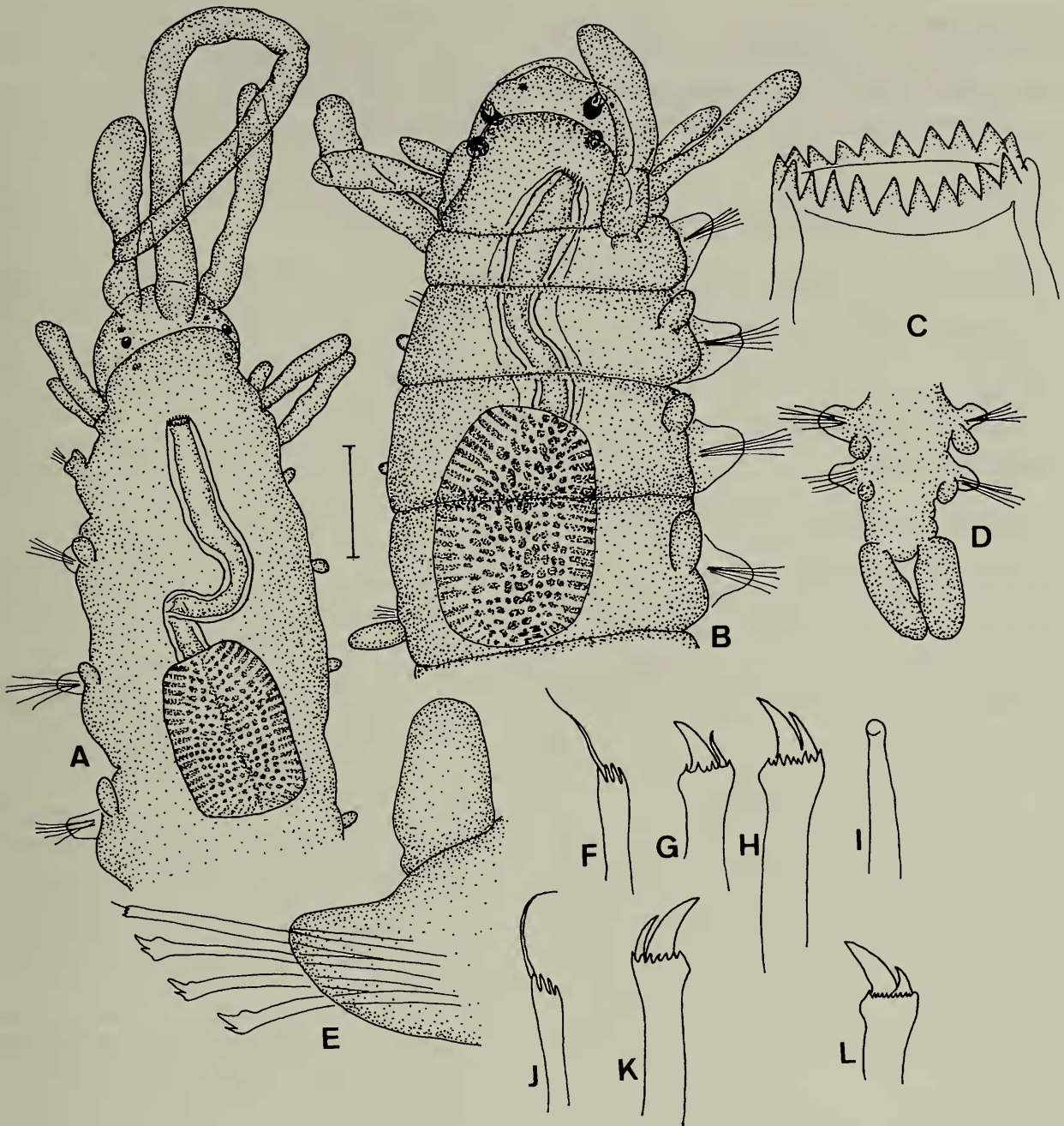


Fig. 1. *Paraprocerastea crocantinae*, gen. and sp. n. A, Anterior end, dorsal view, holotype; B, Anterior end, dorsal view, paratype from Almería; C, Trepan; D, Posterior end, dorsal view, paratype from Almería; E, Middle-posterior parapodium, paratype from Almería; F, J, Bayonet-shaped setae; G, H, K, L, Simple setae; I, aciculum. Scale: A, B, D: 0.13 mm; E: 20  $\mu$ m; C, F, G, H, I, J, K, L: 10  $\mu$ m.

- ital flap present. Dorsal cirri well developed, similar throughout. Falcate simple setae or compound setae ..... *Alluaudella* Gravier, 1905
- One pair of tentacular cirri (?). No occipital flap. Dorsal cirri from setiger 2 small, pyriform. Compound setae ..... *Phyllosyllis* Ehlers, 1897
  - 3. Dorsal cirri only on first setiger of the atokous stock (stolons with very small dorsal cirri on all segments) ..... *Procerastea* Langerhans, 1884
  - Dorsal cirri throughout in the atokous stocks ..... 4
  - 4. Anterior appendages club-shaped, dorsal cirri from setiger 2 minute, egg-shaped. Only simple setae. Occipital flap present ..... *Paraprocerastea* n. gen.
  - Anterior appendages cylindrical,



- club-shaped or foliaceous, dorsal cirri longer, not egg-shaped. No occipital flap; two nuchal epaulettes. Compound setae and simple bayonet setae . . . . . 5
5. Dorsal cirri cylindrical . . . . . 6
- Dorsal cirri club-shaped or foliaceous . . . . . 7
6. Bayonet setae as thick as shafts of compound setae. Without body ciliation . . . . . *Proceraea* Ehlers, 1864
- Bayonet setae more slender than shafts of compound setae. Segmentalciliary bands . . . . . *Autolytus* Grube, 1850
7. Dorsal cirri foliaceous. Two short ciliated nuchal epaulettes . . . . . *Myrianida* Milne Edwards, 1845
- Dorsal cirri club-shaped. Two very long, ciliated, foliaceous nuchal epaulettes . . . . *Umbellisyllis* Sars, 1869

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